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NPIC/R-774/64

August 1964

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PHOTOGRAPHIC INTERPRETATION REPORT

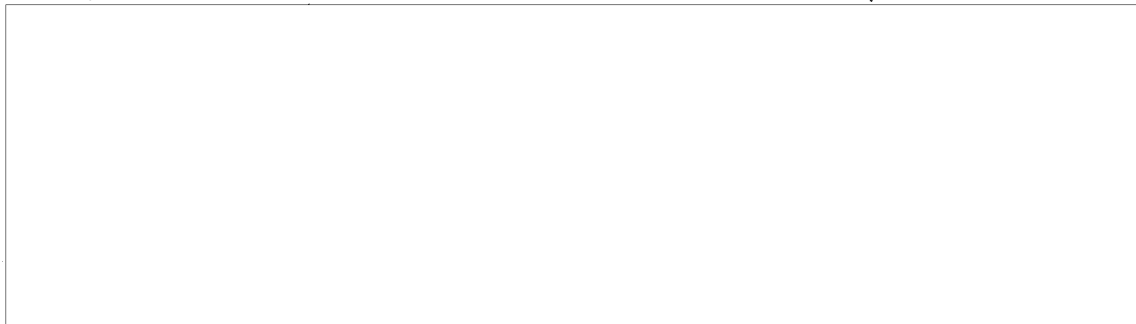
NEW DEVELOPMENTS AT MAJOR COMPLEX
NEAR HSING-LUNG-CHUANG, CHINA
JUNE 1964



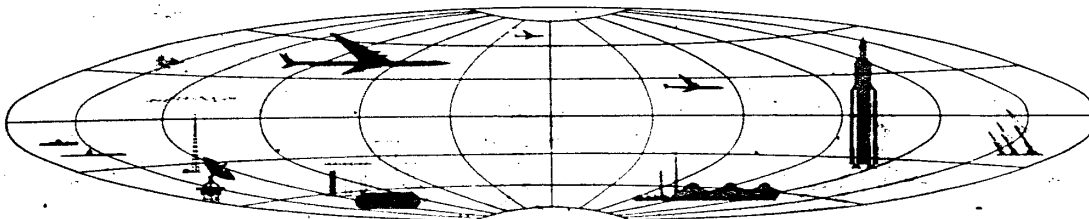
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PHOTOGRAPHIC INTERPRETATION REPORT

NEW DEVELOPMENTS AT MAJOR COMPLEX
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SUMMARY

The first photographic coverage since September 1963 of the major complex under construction near Hsing-lung-chuang, China, was obtained [redacted]. Analysis of the latest photography reveals that construction activity has continued, apparently on a high-priority basis, and that there has been considerable accomplishment in various parts of the complex during the ten-month interval. While no positive

identification of the intended functions of the complex can yet be made, certain facilities and the layouts of certain areas may now be correlated with those of certain Soviet installations to a degree that permits possible identifications of some functions. These Soviet installations perform research, development, and fabrication of nuclear weapons.

INTRODUCTION

The purpose of this report is to describe changes that have taken place between September 1963 and June 1964 at a major complex under high-priority construction in north-central China and thus to facilitate early identification of its intended function. This complex is located at 36-55N 100-51E, about 4 nautical miles (nm) northwest of the village of Hsing-lung-chuang and 8 nm east of Ching Hai (Koko

Nor) a large lake (Figure 1).

Initial construction of the Hsing-lung-chuang complex may have begun as early as 1959; far-oblique photography of September 1959 reveals a road under construction into the area and some light-toned areas of possible earth scarring at the site. Photography of September and December 1961 showed a large installation in an early stage of construction, and a report

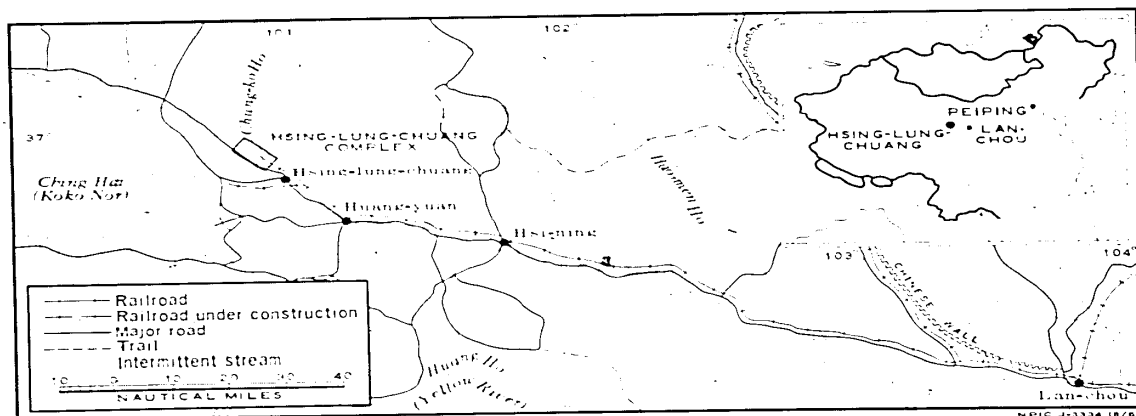


FIGURE 1. LOCATION OF HSING-LUNG-CHUANG COMPLEX.

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based on this photography was released in January 1962. 1/ Several subsequent photographic missions covered the area, and the extraordinary amount of activity seen at the site indicated that the Chinese attached much importance and had given high-priority to the project. A photographic interpretation report based on photography through September 1963 and containing detailed descriptions of the various parts of the large complex was released in February 1964. 2/ While much progress had been made by September 1963, construction had not progressed far enough at that time to permit an identification of the intended function of the installation.

Following September 1963 photographic coverage of the Hsing-lung-chuang complex, no further coverage was obtained.

Although complete coverage was not obtained because of clouds, and despite haze and the small scale of the photography which limits photographic interpretation, the June 1964 photography reveals that construction has continued, apparently still on a high-priority basis, and that there has been considerable accomplishment in various parts of the complex during the ten-month interval. Further, certain facilities and the layouts of certain areas may now be correlated with those of certain Soviet installations to a degree that permits possible identifications of some functions. These Soviet installations perform research, development,

This report is based on the June 1964 photography and effects an updating of the February 1964 report. 2/ Only observed changes, construction progress, and comparisons with certain Soviet installations are reported here; the reader is referred to the February 1964 report for complete descriptions and installations of the complex as it existed in September 1963. Since coverage was not complete in September 1963 because of clouds, some of the changes reported here date from August 1963 coverage.

The Hsing-lung-chuang complex is divided into five areas, each of which is somewhat separate from the others. In the referenced report these areas were designated Areas A through E, 2/ and these designations are retained in this report (Figure 2).

A search of the area around the Hsing-lung-chuang complex within a radius of 25 nm failed to reveal any activities that can be associated with the complex, and no related activities were observed along the Hsi-ning/Hsing-lung-chuang rail line.

A resume of more significant findings on the June 1964 photography is presented in the following chapter of this report. The resume is followed by detailed descriptions and illustrations of the changes observed in each area of the complex as well as comparisons of parts of the complex with parts of various Soviet installations.

SIGNIFICANT FINDINGS ON JUNE 1964 PHOTOGRAPHY

Except for continued construction on previously uncompleted buildings, Area A has undergone little change since September 1963.

The three heavy fabrication-type buildings in the walled industrial section of Area B (on

which construction is now complete, or nearly complete) are now seen to be comparable in a number of respects to the two largest buildings

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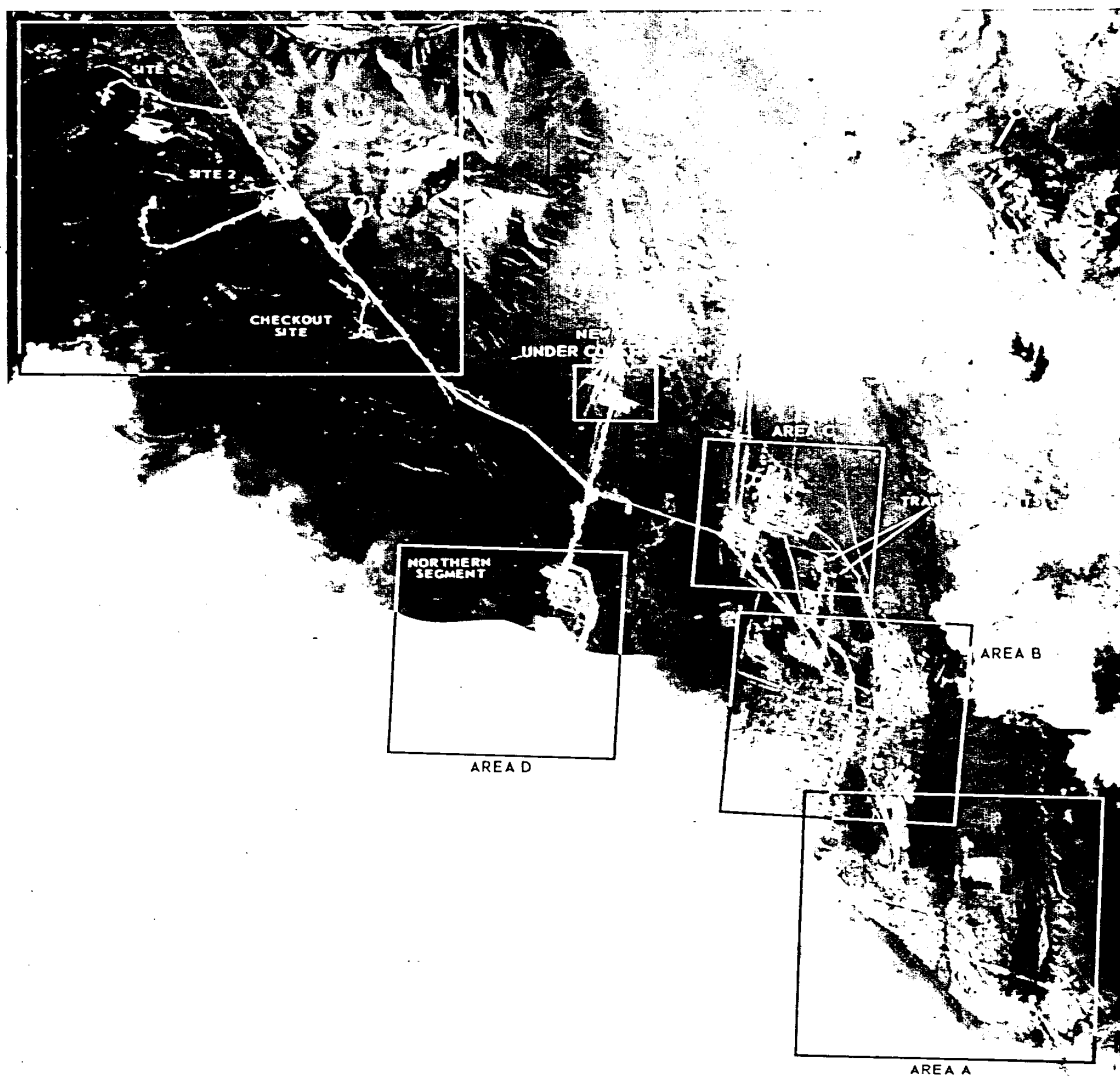


FIGURE 2. HSIUNG-LUNG-CHUANG INSTALLATION, AREAS A THROUGH E, JUNE 1964.

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A new road network in Area C serves four revetted buildings, one possibly revetted building, and a drive-through assembly and checkout building. Also in Area C, two of the three gable-roofed processing buildings with high-bay sections and smaller associated rectangular buildings can now more clearly be seen to be surrounded on three sides by revetments which cover the smaller associated buildings. These processing buildings are now seen to resemble a building

5/ 6/ A new doughnut-shaped structure in the Northern Segment of Area D resembles a structure in the High-Explosives Test Area Support Facility

In Area E, three isolated activities formerly designated Storage Sites 1, 2, and 3 may be instrumentation sites and are redesignated Sites 1, 2, and 3. Since last seen, these sites have been fenced. The Checkout Site now has a new road network which connects a drive-through assembly and checkout building, two vertical tanks, and three revetted buildings. The remoteness of Area E from the other areas of the complex is a characteristic in common with that of the High-Explosive Test Facility

The Southern Segment of Area D is completely cloud covered on the June 1964 photography. In the Northern Segment a new road network now serves three revetted buildings, one possible revetted building, and a drive-through assembly and checkout building. The layout of this facility is similar to that of a High-Explosive Development and Assembly Area (Area 10)

CHANGES, AUGUST-SEPTEMBER 1963 TO JUNE 1964

AREA A

Area A at the southeastern extremity of the complex appears to be the major industrial production area and the transportation and storage center of the installation. The June 1964 photography of Area A is of poor quality, but it does reveal that the area has undergone little or no important changes since September 1963 (Figure 3).

In the industrial section, which is immediately south of the railroad marshaling yard, three new storage-type buildings have been constructed. In the storage section immediately north of the railroad marshaling yard,

two warehouses (in a group of five) that were under construction in September 1963 (item 22, Figure 6, previous report*) are now complete. A large cross-shaped building in the north-eastern part of Area A (item 28, Figure 6, previous report) has apparently been roofed, but the adjacent excavation for a similar building (item 29) appears unchanged.

The high-quality road under construction (which interconnects all parts of the complex) extends in an east-west direction through Area A and comes to a dead end east of the area. This

*Unless otherwise noted, figures cited as being in a "previous report" are in NPIC R-93 64. 2

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FIGURE 3. AREA A, JUNE 1964.

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road appears to have undergone no change in the past ten months. A new road under construction appears to connect Area A with minor support facilities to the southeast of the complex (Figure 3).

AREA B

Area B, which is centrally located in the installation, is the support center of the complex (Figure 4). It also contains a conspicuous walled compound containing several large industrial buildings. Construction has continued, but no significant changes have taken place in this area since August 1963.

The walled industrial section is unchanged except that one of the three heavy fabrication-type buildings, although still under construction, has been nearly completed (item 3, Figure 11, previous report). These three heavy fabrication-type buildings are about the same size with average dimensions of about 320 by 180 feet.

As in August 1963, the thermal power plant (Figure 4) still has adjacent piles of coal. While no smoke can be seen coming from the stack on the June 1964 photography, the quality of this photography is such that the lack of observable smoke cannot be considered conclusive evidence that the plant is not yet in operation. The capacity of this plant may be less than the former estimate of 25 to 50 megawatts.

Construction of the possible auditorium (item 32, Figure 11, previous report) has been completed since August 1963, and several new housing units have been constructed in the same vicinity (Figure 4).

AREA C

Area C (Figure 5), which is directly north

of Area B, appears to have the specialized function of processing sensitive materials. As in earlier photography, activity in Area C appears to be focused on three large uniquely shaped processing buildings, each of which is associated with an adjacent smaller rectangular building (items 1, 2, and 3, Figures 16 and 18, previous report). An unusual feature of these buildings as seen on earlier photography was the curved, enclosed accessways that extended from both ends of the processing buildings and terminated with vertical walls. A similar curved passageway connected each processing building with its associated building.

On the June 1964 photography it appears that the smaller associated buildings of the two northernmost processing buildings (items 1 and 2) have been completely covered with earth, and the earth mounding curves around the ends of the processing buildings covering the curved accessways with the vertical walls at the ends of the accessways serving as retaining walls for the mounded earth (Figures 5 and 6). The curved passageways between the buildings apparently have not been completely covered with earth.

There is a noticeable similarity between the three processing buildings in Area C and

A large building immediately south of the unrevetted processing building (Figure 5), formerly identified as a probable processing building (item 8, Figure 16, previous report), is now seen to be a drive-through assembly and check-out building, although the deep footings observed

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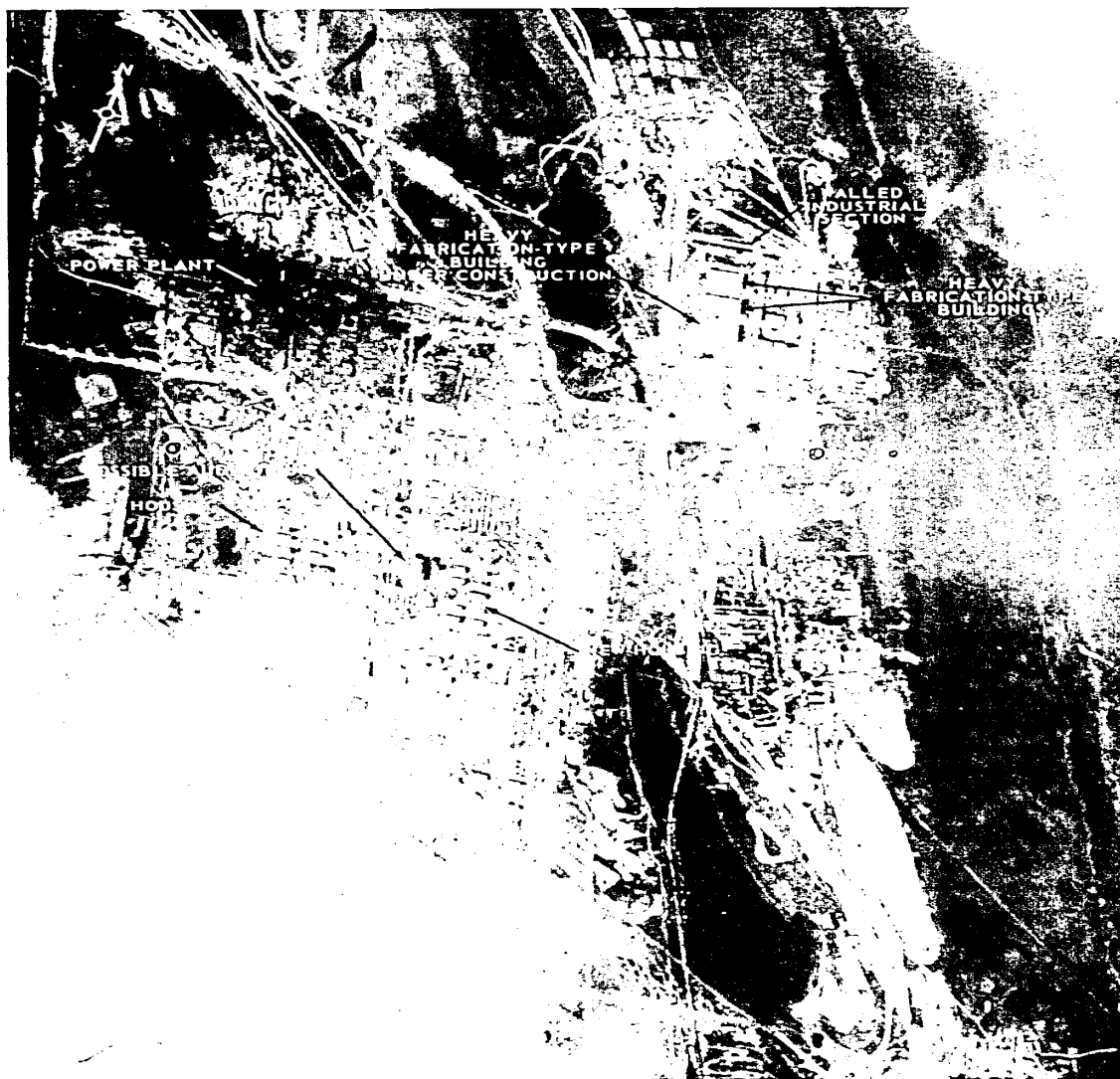


FIGURE 4. AREA B, JUNE 1964.

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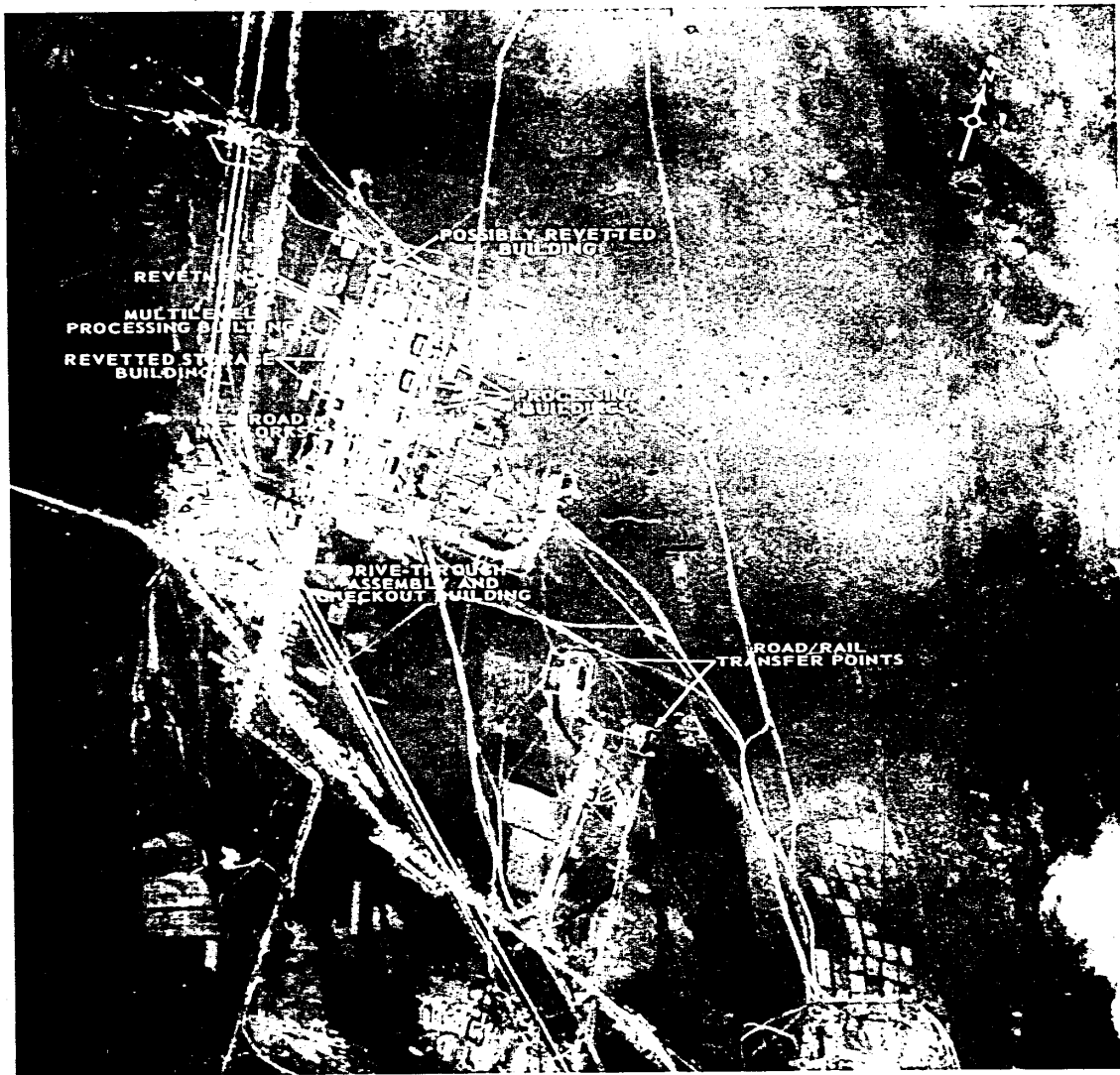


FIGURE 5. AREA C, JUNE 1964.

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in the initial phase of its construction suggest the possibility that it has additional functions. 2/

A new road has been constructed west of the three processing buildings in a north-south direction and loops through the assembly and checkout building mentioned in the foregoing paragraph. The north-south part of this road net has been constructed over what was identified as a ditch on the August 1963 photograph. 2/

A second north-south road has also been constructed west of the revetted storage build-

ings. At its southern extremity it curves east around the southernmost of the two storage buildings and ties in with the previously existing road network. Its northern extremity is at a small building which is now possibly revetted and which was formerly identified as a probable production building (item 18).

The poor quality of the June 1964 photograph precludes further interpretation of the multilevel processing building (Figure 5). (This building is item 5, Figures 16 and 18, previous report.)

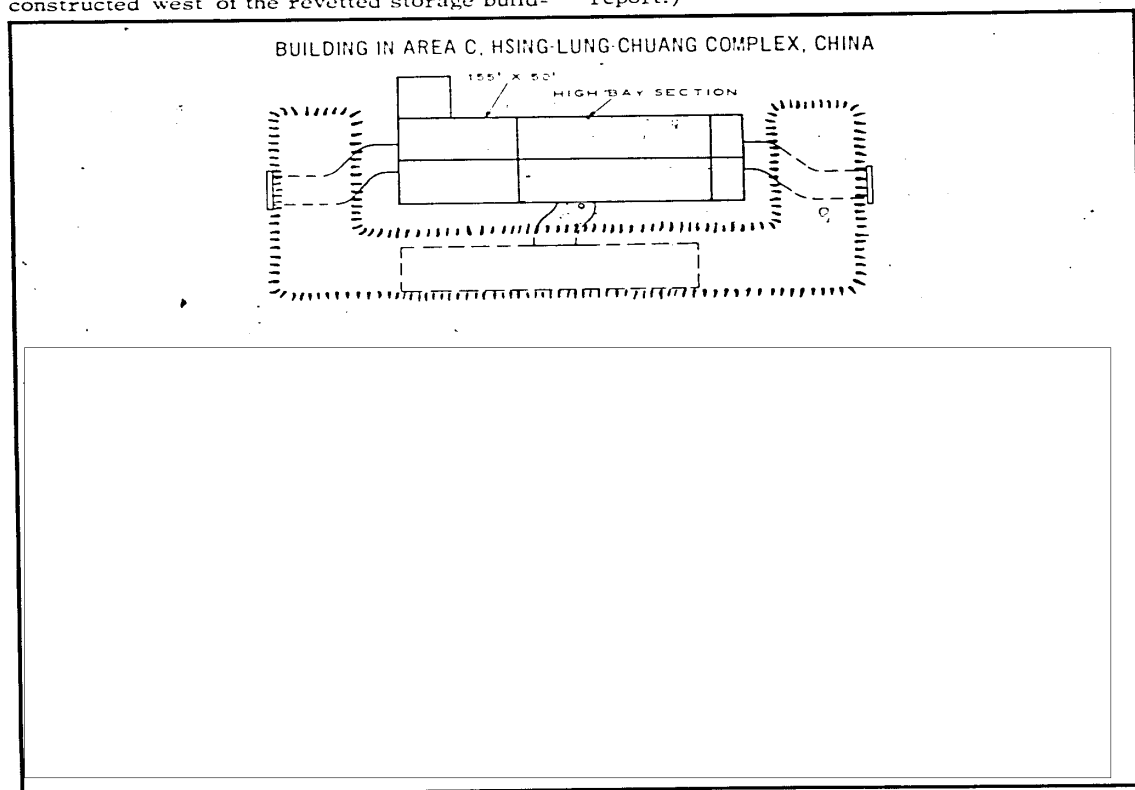


FIGURE 6. REVETTED PROCESSING BUILDING AT HSING-LUNG-CHUANG, CHINA AND BUILDING AT NIZHNYAYA TURA, USSR. NPIC J-3339 (8/64)

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In the northernmost of the two road/rail transfer points, a rectangular building has been constructed at the end of the rail spur.

AREA D

Area D is divided into two separately secured parts designated as the Northern and Southern Segments in the previous report. 2/ Construction in Area D was in an early but rapidly progressing stage when seen on photography of August and September 1963. On the June 1964 photograph, the Southern Segment is cloud covered, but the Northern Segment can be seen in considerable detail (Figure 7). A line drawing (Figure 8) illustrates the current status of construction in the Northern Segment, and a comparison of this drawing with the drawing on Figure 20 of the previous report 2/ reveals that there has been a considerable amount of new construction since August 1963. Changes are described in detail in the following paragraphs.

Three buildings previously identified in Area D (items 9, 10, and 11, Figure 20, previous report) are now revetted with U-shaped revetments. A fourth U-shaped revetment surrounding a possible building is seen in the southeastern corner of the area (Figures 7 and 8).

A new road system interconnects the revetted buildings described in the foregoing paragraph, and a loop at the northwestern corner of this new road system passes through a T-shaped building (item 13, Figure 20, previous report). A reexamination of August 1963 photography reveals that this building was probably T-shaped at that time, but the bar of the T is obscured by shadows on that photography, and it was reported as a rectangular building in the previous report. 2/ This building, which has a two-step roof, is a drive-through building with a loop road passing through the high-bay section of the building which is the stem of the

T. A possible mound is situated in the central part of the road system.

A new doughnut-shaped structure with an outside diameter of approximately 275 feet has been constructed in the northeastern corner of the Northern Segment and is linked with the other facilities in the area by the new road net (Figures 7 and 8). A narrow, wedge-shaped break is in the western side of the structure, the narrow part being on the inner side. This structure bears a strong resemblance to a structure at the High-Explosive Test Area Support Facility.

A comparison of the Northern Segment of Area D with what is believed to be a High-Explosive Development, and Assembly Area (Area 10)

reveals a marked similarity between the two facilities (Figure 8). The Sarova installation is the subject of a 1960 photographic interpretation report, PIC/JR-1004/60, in which Area 10 is illustrated on Figures 16 and 17 and identified at that time as a probable environmental test facility. 5/ In a subsequent report, NPIC/R-37/63, it was stated that further study indicated that Area 10 was "more

6/ The principal similarities between the Chinese and Soviet facilities are seen in the revetted buildings and in the layouts of the road networks (Figure 8). Also, the drive-through T-shaped building in the northwestern corner of the Northern Segment has its counterpart in the building at the southern extremity of the Sarova facility (item 21, Figure 16, PIC/JR-1004/60). 5/

On the August-September 1963 photography, the new high-quality road under construction

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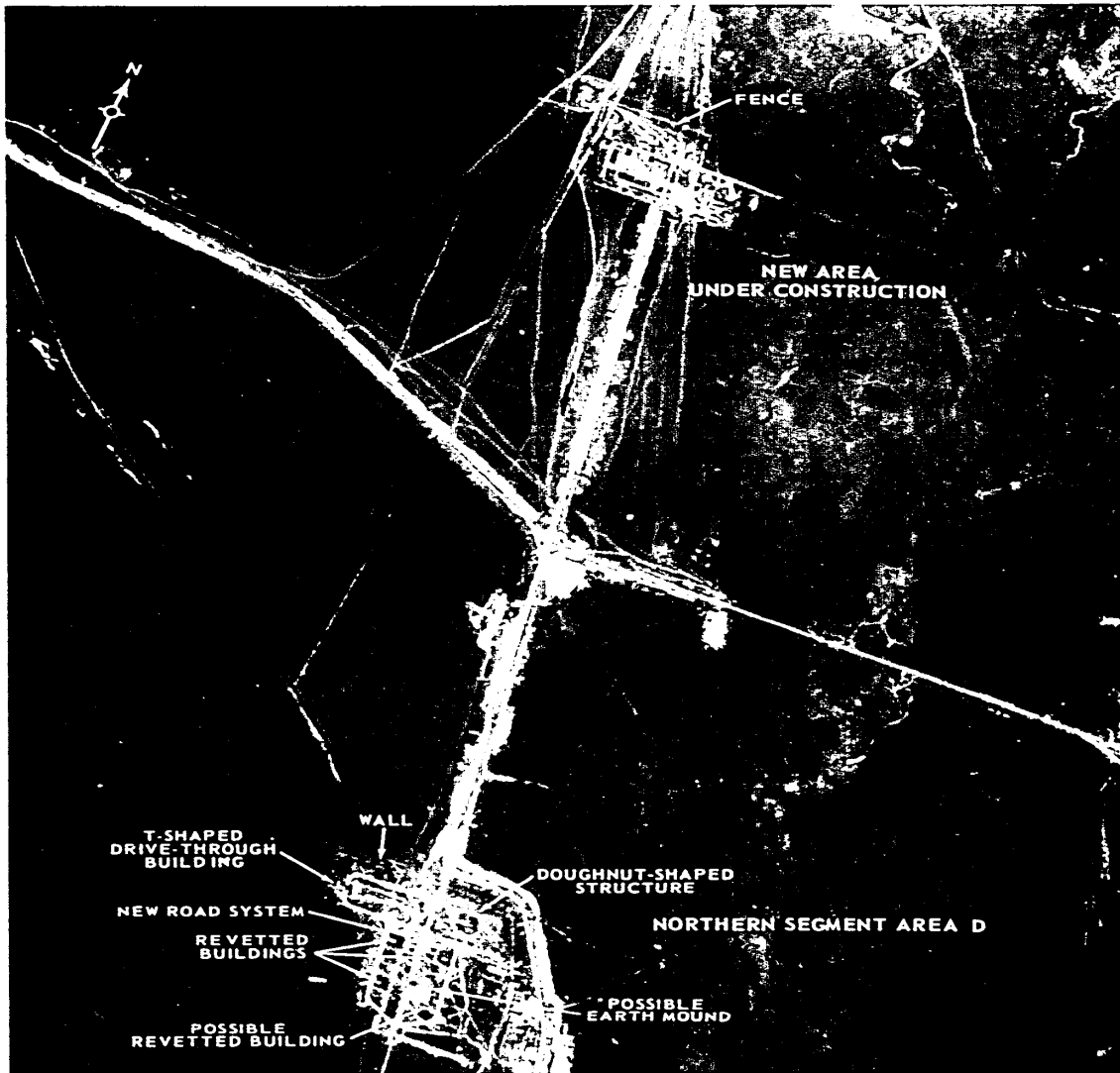


FIGURE 7. NORTHERN SEGMENT OF AREA D AND NEW AREA UNDER CONSTRUCTION, JUNE 1964. NPIC J-3340 (8/64)

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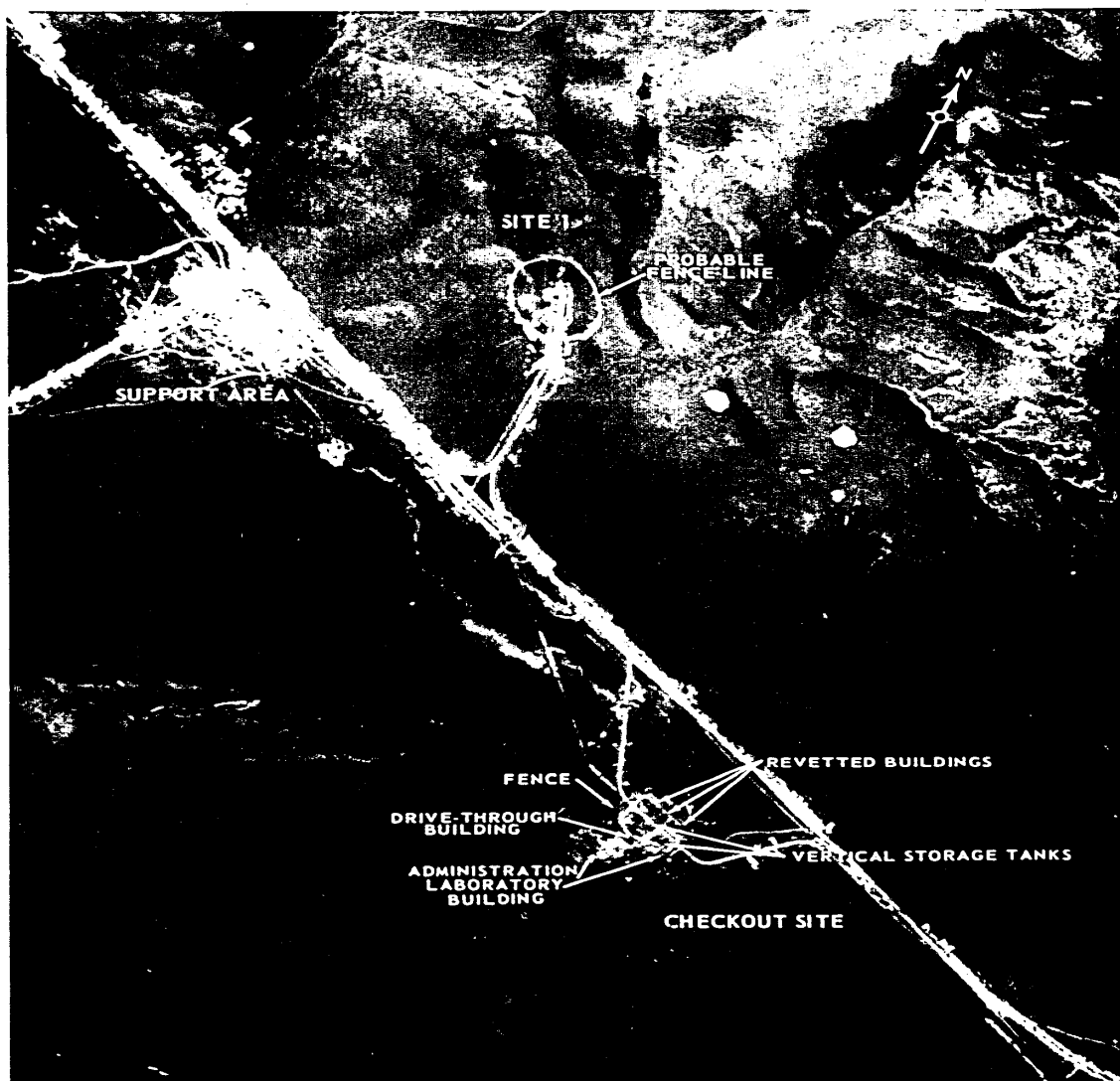


FIGURE 9. CHECKOUT SITE, SUPPORT AREA, AND SITE 1 OF AREA E, JUNE 1964.

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extending directly north from Area D ended abruptly in open country about 1.5 nm from the Northern Segment. 2/ On the June 1964 photography the dead end of this road is now the site of a new fenced area under construction (Figures 2 and 7). This new area is in an early stage of development and contains several small buildings which are probably construction sheds.

AREA E

Area E consists of four small widely separated facilities (Figures 2, 9, and 10). These facilities are interconnected by an extension of the high-quality road network that links together all parts of the complex and which has wide-radius turns. In the previous report, one of the four facilities was identified as a checkout site and the other three as storage sites. 2/ As a result of new photographic coverage and continuing study of all available photography, the storage function is no longer ascribed to this area. The Checkout Site designation is retained, but the formerly designated Storage Sites 1, 2, and 3 are now designated Sites 1, 2, and 3 (Figures 9 and 10).

A marked change has taken place at Sites 1, 2, and 3 since August 1963. These three sites have been surrounded by sharply defined earth scars, probably fence lines, creating circular patterns. The diameter of the circular pattern at Site 1 is about 1,000 feet (Figure 9) and the diameters at Sites 2 and 3 are each about 3,500 feet (Figure 10). Trees and brush within the circular patterns of all three sites have apparently been destroyed, either by burning or by chemicals.

At the Checkout Site (Figure 9) the probable checkout/workshop building (item 1, Figures 24, 25, and 26, previous report) is now firmly identified as a drive-through assembly and

checkout building. It is situated on a short curved road which is tied in with the road leading to the other three sites and which is also connected to two vertical tanks situated in the central part of the site. The probable housing/administration building (item 2) now appears to have a laboratory rather than a housing function. The site also contains three small revetted buildings.

No new construction can be seen at Site 1, and the three formerly identified possibly bunkered structures comprising the site appear much the same as in August 1963. Site 2 also has undergone no apparent change insofar as its structures are concerned.

At Site 3, a horseshoe-shaped building (item 9, Figures 29 and 30, previous report) which appeared to be earth covered in September 1963 is again seen in its original configuration on the June 1964 photography. This raises a question as to whether or not the structure is actually covered with earth, a question that cannot be resolved until better-quality photography is obtained. Another building (item 12) which is at the northern end of a bunker appears to have been heightened at its northern end. A facility identified as a borrow pit in the previous report now appears to be a cleared area containing an earth mound. (This mound is directly west of items 11 and 12, Figure 29, previous report.)

A support area is observed at the intersection of the main road serving the area and the road leading to Site 2 (Figures 9 and 10). Although the quality of the photography is poor, the site appears to contain two or possibly more support-type buildings, each measuring about 150 by 80 feet. On the August 1963 photography this area appeared to contain temporary construction housing. 2/

A characteristic of Area E in common with the High-Explosive Test Facility (Area 5) of the

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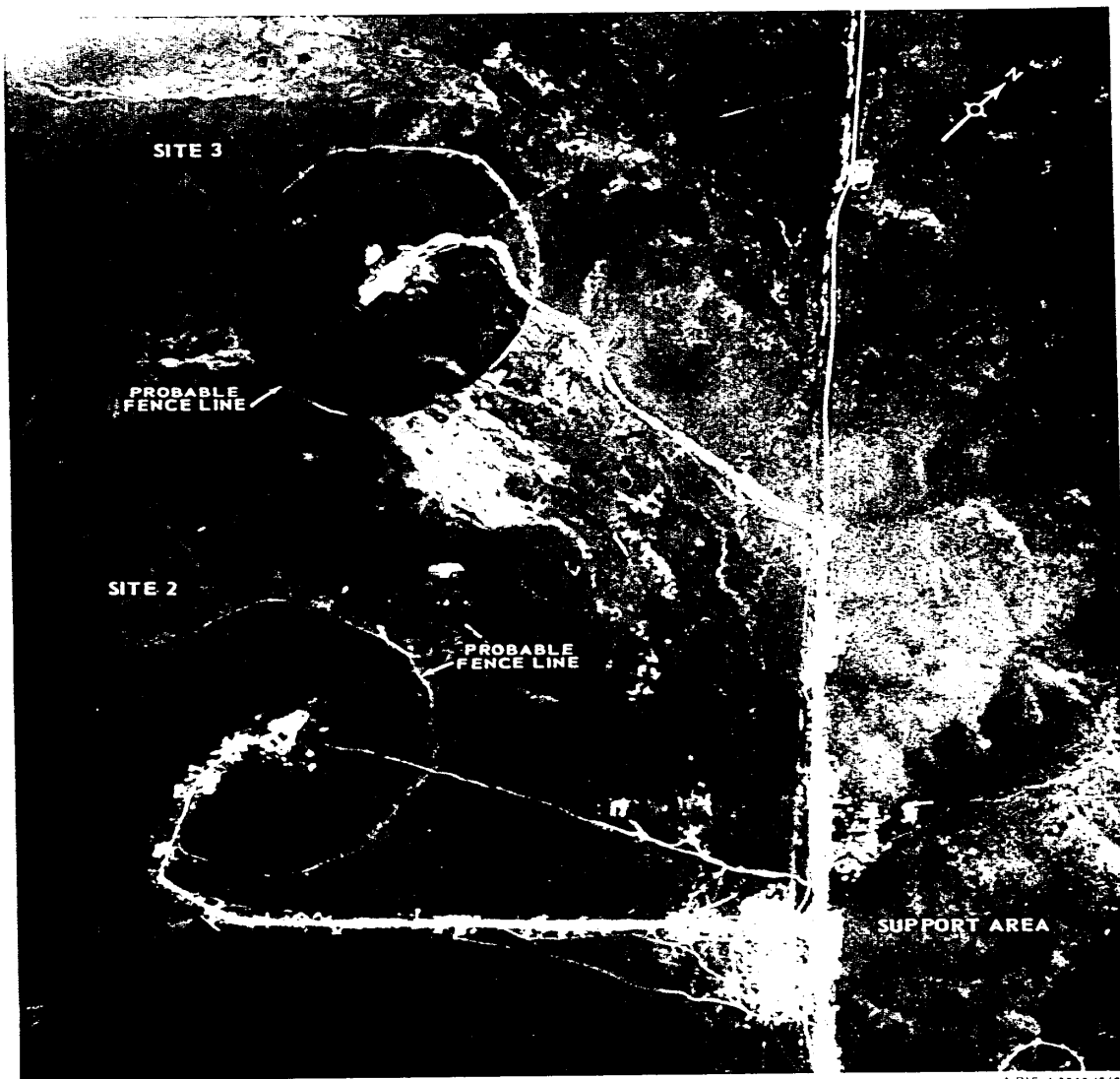


FIGURE 10. SUPPORT AREA AND SITES 2 AND 3 OF AREA E, JUNE 1964.

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is
the remote location at the extremity of the
complex. 3/4/ Similarities between the Check-

MAPS OR CHARTS

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AMS. Series 1301, Sheet NJ47, 2d ed, scale 1:1,000,000 (UNCLASSIFIED)

REQUIREMENTS

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NPIC PROJECT

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